

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (canceled)
2. (previously presented) A control method according to claim 21, characterised in that the said object is anisotropic.
3. (previously presented) A control method according to claim 21, characterised in that the said object is depolarising.
4. (previously presented) A control method according to claim 21, characterised in that the said object induces diffraction phenomena.
- 5-6. (cancelled)
7. (previously presented) A method for controlling the manufacture of an object according to claim 21, characterised in that the object manufactured is a solid-state component.
8. (previously presented) A method for controlling the manufacture of an object according to claim 7, characterised in that the ellipsometric measurement characterises a layer during deposit.
9. (previously presented) A method for controlling the manufacture of an object according to claim 7, characterised in

that the ellipsometric measurement characterises a layer during engraving.

10. (previously presented) A method for controlling the manufacture of an object according to claim 8, characterised in that the ellipsometric measurement characterises the composition of the layer.

11. (previously presented) A method for controlling the manufacture of an object according to claim 8, characterised in that the ellipsometric measurement characterises the thickness of the layer.

12. (previously presented) A control method according to claim 21, characterised in that the manufacture is carried out by gas dissociation and it is controlled by a gas panel.

13. (previously presented) A method for controlling the manufacture of an object according to claim 2, characterised in that the gas panel supplies a plasma reactor.

14. (previously presented) A method for controlling the manufacture of an object according to claim 2, characterised in that the gas panel controls gas flow-rates.

15. (canceled)

16. (previously presented) An installation for manufacturing an object according to claim 22, characterised in that it is conducted by gas dissociation.

17. (previously presented) An installation for manufacturing an object to claim 22, characterised in that it comprises a coupled modulator at input.

18. (previously presented) An installation for manufacturing an object to claim 22, characterised in that it comprises a polarimeter at output.

19-20. (cancelled)

21. (currently amended) A method of controlling manufacture of anisotropic objects and controlling manufacture of depolarizing objects, comprising the sequential steps of:

determining at least two selected components of the Mueller matrix that represents the object and that characterizes the manufacture of the object, the selected components being other than ellipsometric angles  $\psi$  and  $\Delta$  and the trigonometric functions of the ellipsometric angles  $\psi$  and  $\Delta$ ;

making an ellipsometric measurement of object during manufacture;

extracting, from the ellipsometric measurement, only the determined selected components of the Mueller matrix; and

controlling the manufacture of the object in relation to the extracted components of the Mueller matrix,

the at least two selected components being one of a linear combination of the lines of the Mueller matrix and a linear combination of the columns of the Mueller matrix.

22. (currently amended) An installation for making anisotropic objects and making depolarizing objects, comprising:

an ellipsometer configured to make an ellipsometric measurement of an object during manufacture;

a processor configured to extract, from the ellipsometric measurement, only determined selected components of the Mueller matrix that represents the object and that characterizes the manufacture of the object,

the processor also configured to control the manufacture of the object in relation to the extracted components of the Mueller matrix, wherein,

the determined selected components are at least two selected components of the Mueller matrix that characterize the manufacture of the object, and

the determined selected components are other than ellipsometric angles  $\psi$  and  $\Delta$  and trigonometric functions of the ellipsometric angles  $\psi$  and  $\Delta$ ,

the at least two selected components being one of a linear combination of the lines of the Mueller matrix and a linear combination of the columns of the Mueller matrix.

23. (previously presented) The installation of claim 22, further comprising:

a plasma chamber (1) with power control;

a support (3) within the chamber for supporting the object, the object being a substrate (2) serving as an original element of a solid-state wafer to be manufactured;

a pump (4) connected to the chamber to maintain a pressure within the chamber; and

a gas panel (6) connected to the chamber to supply the chamber with gas, the gas panel having plural gas inputs (62-65), each gas input connected to the chamber via a flow-meter (621, 631, 641, 651) and a valve (622, 632, 642, 652),

the ellipsometer (9) comprising a transmission head (91) and a receiving assembly (92), the ellipsometer arranged to control the gas panel to control a preparation of layers on the substrate,

the transmission head comprising a polarization state generator,

the receiving assembly comprising a polarimeter,

the processor comprising a first processing unit and a second processing unit,

the first processing unit (93) connected to the transmission head to control the polarization state generator, and connected to the receiving assembly to receive an output signal from the polarimeter, and

the second processing unit connected to the first processing unit for receiving control signals from the first processing unit, and connected to the gas panel, the pump, and

the power control of the chamber.

24. (currently amended) A manufacturing installation, comprising:

a plasma chamber (1) with power control;

a support (3) within the chamber for supporting a substrate (2) serving as an original element of a solid-state wafer to be manufactured;

a pump (4) connected to the chamber to maintain a pressure within the chamber;

a gas panel (6) connected to the chamber to supply the chamber with gas, the gas panel having plural gas inputs (62-65), each gas input connected to the chamber via a flow-meter (621, 631, 641, 651) and a valve (622, 632, 642, 652);

an ellipsometer (9) comprising a transmission head (91) and a receiving assembly (92), the ellipsometer arranged to control the gas panel to control a preparation of layers on the substrate based on ellipsometric measurement of the substrate,

the transmission head comprising a phase modulator,

the receiving assembly comprising a polarizer-analyzer;

a first processing unit (93) connected to the transmission head to control the phase modulator, and connected to the receiving assembly to receive an output signal from the polarizer-analyzer,

the first processing unit configured to extract, from the ellipsometric measurement, only determined selected components

of the Mueller matrix describing the substrate and to control the manufacture of the substrate in relation to the extracted components of the Mueller matrix,

a second processing unit connected to the first processing unit for receiving control signals from the first processing unit, and connected to the gas panel, the pump, and the power control of the chamber, wherein,

the determined selected components are at least two selected components of the Mueller matrix that characterize the manufacture of the object, the selected components being other than ellipsometric angles  $\psi$  and  $\Delta$  and trigonometric functions of the ellipsometric angles  $\psi$  and  $\Delta$ ,

the two selected components being one of a linear combination of the lines of the Mueller matrix and a linear combination of the columns of the Mueller matrix.